



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,468	04/18/2001	David Kirk Rodham	109846-260	8841

7590 08/12/2004

Edward D. Grieff, Esq.
Hale and Dorr LLP
Suite 1000
1455 Pennsylvania Avenue, N.W.
Washington, DC 20004

EXAMINER

METZMAIER, DANIEL S

ART UNIT PAPER NUMBER

1712

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/836,468

Applicant(s)

RODHAM ET AL.

Examiner

Daniel S. Metzmaier

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 14-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08/28/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1-8 and 14-22 are pending.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8, 15 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is indefinite because isocyanate is not a polymer, which after polymerization does not exist as isocyanate. Furthermore, "oil-soluble polymer" lacks antecedent basis in claim 7.

Claims 15 and 19 contain improper alternative language. Due to the use of "and, where appropriate" in line 4 and the multiple use of "or" it is unclear what are the metes and bounds of the species claimed and the breadth of the grouping.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1712

5. Claims 1-8, 17 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishikawa, US 4,880,721. Ishikawa (column 5, lines 64 et seq) discloses:

A preferred process for the preparation of the light-sensitive microcapsules of the invention is performed by dissolving a polyisocyanate compound in a core material of a hydrophobic liquid comprising a light-sensitive silver halide and a polymerizable compound, and if desired, a reducing agent and a dye or a dye precursor; then the hydrophobic liquid is dispersed in an aqueous medium containing a polyamine compound or a polyol compound to form a dispersion containing small droplets of the hydrophobic core material, wherein the dispersion preferably contains a catalyst for accelerating polycondensation reaction between the polyisocyanate compound and a polyamine compound and/or a polyol compound; and heating the dispersion to 40°-90° C. to form a polyurea resin (reaction product of the polyisocyanate compound and the polyamine compound or water) and/or a polyurethane resin (reaction product of the polyisocyanate compound and the polyol compound) to give light-sensitive microcapsules. (Emphasis added).

Ishikawa (column 5, lines 64 et seq) further discloses:

For the incorporation of silver halide and a polymerizable compound into the hydrophobic liquid for the preparation of the core material, silver halide is generally incorporated first into an aqueous medium for the preparation of a silver halide emulsion and then the emulsion is mixed with a hydrophobic solvent. The aqueous medium of the silver halide emulsion is moved at a later stage into an aqueous medium employed for the preparation of the microcapsules. Thus, there is brought little water into the core of the obtained microcapsule. Simultaneously with the movement of water, silver halide grains move from the inside of the core material phase (oily phase) to the dispersion medium phase (aqueous phase), whereby most of silver halide grains gather in the vicinity of the interface between the core material phase and the dispersing medium phase. Accordingly, the silver halide grains are apt to be present in the vicinity or even within the inner shell at high concentration, if the silver halide is incorporated into the core material using a silver halide emulsion. On the other hand, the silver halide grains are not present within the outer shell. Such localized distribution of silver halide grains does not adversely affect the property of the light-sensitive capsule, and it is probable that such distribution is preferable in enhancement of the sensitivity. (Emphasis added).

The water-in-oil-in-water emulsion would have inherently existed in the formation of the compositions of Ishikawa.

Art Unit: 1712

Ishikawa polymer walls of polyurea resins or polyurethane resins formed from (column 4, lines 35-36, 45-46 and 59-60) toluene diisocyanate, tetraethylenepentamine, and polymethylene polyphenyl triisocyanate as possible reactants.

6. Claims 1 and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Tadros, US 4,875,927. Tadros (abstract; column 2, lines 66 et seq; particularly column 4, lines 50 et seq; examples; and claims) disclose water-in-oil-in-water (W/O/W) emulsions employing polymeric emulsifiers (ABA block co-polymer of poly-12-hydroxystearic acid and polyethylene oxide having a molecular weight of about 5000 and/or ethoxylated polyarylphenol, ethoxylated polyarylphenol phosphates, sulphated polyarylphenol ethoxylate). The Tadros composition read on the claimed compositions having polymer encapsulated phases since the emulsifiers would have inherently migrated to the interface of the W/O/W emulsions.

Tadros (column 2, lines 6 et seq) discloses the compositions having a balanced osmotic potential for the advantage of stability.

7. Claims 1-2, 7, 16-17 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeda, US 5,053,308. Takeda (column 6, line 58, to column 7, line 5) disclose the formation of W/O/W emulsion double emulsion to encapsulate a silver halide emulsion with the aid of solvent and characterizes the encapsulated materials as have a doubly encapsulated structure. Takeda (column 11, lines 18-21 and 33-35) discloses the use of high-boiling organic solvents, which are used as solvents in emulsifying and dispersing hydrophobic compounds. Takeda further discloses the specific examples of oleate esters and monostearin, i.e., glyceryl tristearate.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda, US 5,053,308, in view of Drew Myers, **Surfactant Science and Technology, Second Edition** (hereafter Myers). Takeda discloses compositions and methods as set forth in the above anticipation rejection over the same reference. The basis and citations are herein incorporated by reference.

Takeda differs from the claims 14 and 18 in the addition of water-soluble electrolyte to balance the osmotic potential.

Myers (page 246) discloses electrolytes exhibit significant effects on emulsion stability in multiple emulsion systems, affect the transport properties between phases and advantageously may lead to tighter packing of the molecules at the interface.

These references are combinable because they teach multiple emulsions and additives conventionally known to affect their stability. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ water-soluble electrolytes to balance the osmotic potential of the multiple emulsions to avoid excessive transport across the oil phase and/or increase interfacial packing.

11. Claims 3-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda, US 5,053,308, in view of Ishikawa, US 4,880,721. Takeda discloses compositions and methods as set forth in the above anticipation rejection over the same reference. The basis and citations are herein incorporated by reference.

Takeda differs from the claims 14 and 18 in the addition of water-soluble electrolyte to balance the osmotic potential.

Ishikawa (column 3, lines 36 et seq) discloses microcapsules having doubly encapsulated structure wherein the wall forming materials are polyurea resins or polyurethane resins formed from (column 4, lines 35-36, 45-46 and 59-60) toluene diisocyanate, tetraethylenepentamine, and polymethylene polyphenyl triisocyanate as reactants.

Allowable Subject Matter

12. Claims including the limitations of claim 19 and limited to oil-soluble isocyanates and isocyanate-reactive polymer precursors, would be allowable if rewritten to

Art Unit: 1712

overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bohn, US 4,857,335, is considered cumulative to the above references for at least claim 1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM